

16. A method for the production of a protein with citrate lyase activity, said method comprising the steps of expressing a suitable plasmid in a host organism and isolating the protein in an active form, wherein the plasmid contains the information from a gene cluster comprising at least six genes and an inducible promoter.

sub 1

17. The method of claim 16, wherein the genes code for certain subunits of the protein having citrate lyase activity and/or for components that contribute to the biosynthesis of the complete enzyme.

18. The method of claim 16, wherein the plasmid contains the genes citC, citD, citE, citF, citG and a DNA fragment obtainable from E. coli that is located between citF and citG on the E. coli citrate lyase gene cluster.

AI  
cm 1

19. The method of claim 18, wherein the DNA fragment codes for a 20-kDa protein.

20. The method of claim 18, wherein the DNA fragment codes for a protein containing the motif G(A)-R-L-X-D-L(I)-D-V.

21. The method of claim 20, wherein at least one gene is obtainable from E. coli, Haemophilus influenzae, Klebsiella pneumoniae or Leuconostoc mesenteroides.

22. The method of claim 16, wherein at least four genes are derived from a microorganism that is specific for the isolated protein with citrate lyase activity.

23. The method of claim 22, wherein the microorganism is Klebsiella pneumoniae.

24. The method of claim 16, wherein the host organism is a eukaryotic or prokaryotic microorganism.

sub 3  
7

25. The method of claim 24, wherein the host organism is *E. coli*.
26. The method of claim 16, wherein the expression occurs under aerobic conditions.
27. A recombinant soluble protein with citrate lyase activity and a molecular weight of about 14,000 to 15,000 Dalton obtainable by the process of claim 16.
28. A test kit for the determination of citric acid which comprises the following components:
- (a) a protein with citrate lyase activity obtainable according to the method of claim 16;
  - (b) at least one protein with hydrogen-transferring activity;
  - (c) nicotinamide adenine dinucleotide or a corresponding derivative in a reduced form; and
  - (d) optionally, suitable stabilizers, activators, substances to avoid or reduce interferences, and buffer solutions.
29. The test kit of claim 28, wherein L-malate dehydrogenase and optionally L-lactate dehydrogenase are used as the hydrogen-transferring enzymes.
30. A method for determining the presence, absence or quantity of citric acid in a sample, said method comprising the step of mixing an enzyme obtainable according to claims 16 to 26 with the sample.
- 

AI  
encl.